In the Drawings:

A Request for Drawing Corrections is submitted concurrently herein to address the Examiners objections to the drawings. Specifically, Figure 4 is replaced with a new Figure 4 which shows optional and alternative embodiments as described in the Specification as originally filed. No new matter is added. Reference numerals to identify the added elements of Figure 4 are added to the existing text of the Specification, below.

Remarks:

Reconsideration of the above referenced application in view of the enclosed remarks is requested. Claim 40 is canceled. Claims 6-7, 24, 27, 30-31, 37, and 39 are amended. Pending Claims 1 – 39 and 41-42 remain in the application. Applicant thanks Examiner for removing the restriction requirement.

ARGUMENT

Objection to Drawings:

The Examiner objects to the drawings under 37 C.F.R. 1.83(a) asserting that the drawings do not show every feature of the invention. A Request for Drawing Corrections is submitted concurrently herein to address the Examiner's objections. Applicants enumerate the Examiners assertions and point out the appropriate reference numeral in the drawings, below.

- "user input requesting that the buffered write operation be committed" may be found at least at 212, Fig. 2, inherent as a condition requiring device access.
- "deleting from physical memory a prior buffered write operation request that seeks to modify the same storage locations on the device as the write operation to be buffered" may be found at least at paragraph [0015] and is inherent in the operation of the intermediate file system driver 102 (Fig. 1) and at 214 of Fig. 2.
- "a processor communicatively coupled to physical memory and the at least one non-volatile storage device" is shown inherently in Figure 1, where it will be apparent to one of ordinary skill in the art that the file system driver 104 resides on the processor and it is shown to be coupled to physical memory 110 and at least one device 106.
- "determining whether a system associated with the non-volatile storage is operating under battery power" may be seen in Figure 3, decision block 304. Block 304 determines whether the system is operating under limited power conditions, which includes battery power, as described in the specification, at least in Para [0020].
- "identifying the subset of the entire file to be read into memory is based on one or more file access trends" is inherently shown in Figure 4. However, a new Figure 4

and corresponding description are submitted to further address the Examiner's objection. 418A more specifically addresses this element.

- "if a limited power condition exists, the requested file portion is read from the device and returned to the requesting process before a remainder of the superset is read into memory" is inherently shown in Figure 4, 416, 418 and 418A in conjunction with the description of the intermediate file system driver of Figure 1.
- "if a superset of the requested file portion is read into memory, further comprising accessing the superset read into memory to fulfill a subsequent request from the process for a portion of the file" is inherent in Figure 4, 404. One of ordinary skill in the art will understand that when the alternate embodiment is implemented for reading supersets (418A) that decision block 404 will determine whether the requested segment has been loaded into memory, rather than the entire file.
- "if a superset of the requested portion is read into memory, deactivating the device" is described, at least, in Para. [0035] and is shown revised Fig. 4 at 422.
- "translating the received read request for the file portion into a plurality of read requests that collectively cause the superset to be read from the device" will be apparent to one of ordinary skill in the art to be shown in Fig. 4. Fig. 4 clearly shows intercepting a read request by the intermediate FSD (402) and translating to one or more read requests in 416 and 418.
- "selectively storing the superset of the requested file portion into memory based on its relative priority" is inherently shown in 418A for determining rules, possibly based on trends, before reading the remainder or superset from the device.
- "an application executing on the processor registers with the intermediate file system driver to indicate compliance with selective buffering techniques to be used in connection with the read/write policy" is described at least in Para. [0017] in conjunction with 102 of Figure 1 and is inherent in Figure 1.

Claim Objections:

Claim 23-24, 27, 30-31, and 37 are objected to because of alleged informalities. This objection is partly in error and should be withdrawn based on the above amendments and following discussion.

Claim 23 should indeed depend on Claim 11 and no correction is believed to be required. If the Examiner maintains this objection, Applicants request a full explanation as to why.

The typographical error in Claim 24 is corrected in the amendments above, and does not change the scope of the claim.

Claims 27, 30, 31 and 37 are amended to use the term "instructions" rather than "information" as requested by the Examiner. This change does not alter the scope of the claims, but is merely proffered to expedite issuance of this application and remain consistent.

The terminology in Claim 27 is correct as written. The Examiner is directed to the specification which clearly describes selectively buffering file write requests (200, Fig. 2) as opposed to selectively committing buffered write operations (300, Fig. 3). The terminology used in the claims is intended to match the terminology used in the description to avoid confusion.

Rejection under 35 U.S.C. § 112

Claims 6-7 are rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps. This rejection is moot based on the above amendments.

Rejections under 35 U.S.C. § 102

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication 2003/0003908 to McGrew et al. (hereinafter, "McGrew et al."). This rejection is respectfully traversed and Claim 1 and its progeny are believed allowable based on the above amendments and the foregoing and following discussion.

McGrew et al. teach a system for storing data in a flash memory. McGrew et al. teach where buffering always occurs before storing. Data to be written to the flash memory is always stored in the buffer. If the flash memory is not ready to be written to, it is continuously polled until it is ready. Once ready, the data is written to the flash memory. This is in contrast to Applicants' claimed invention which requires that a determination is made as to whether the file

system device is activated or deactivated, which is more than just power up for some devices. Further, Claim 1 requires buffering the data only when the device is inactivated. This provides an advantage over a system which always buffers the data. McGrew et al. does not solve the problem of optimizing power in a system by minimizing activation and deactivation of a file device, but merely provides a method for storing data in flash memory after initialization and power up. The Examiner has failed to show that McGrew et al. teach each and every claim limitation of the recited claim. Thus, Claim 1 and its progeny are believed allowable.

Claims 27-30 and 38 are rejected under 35 U.S.C. § 102(b) as being anticipated by USPN 5,978,921 to Ryu (hereinafter, "Ryu"). This rejection is respectfully traversed and Claims 27-30 and 38 and their progeny are believed allowable based on the above amendments and the foregoing and following discussion.

As for Claim 27, the Examiner asserts that Ryu teaches *determining* a power state of a nonvolatile storage device. Ryu merely teaches that differing power states use differing amounts of power (Table 1). Ryu does not teach the step of *determining* the actual power state of the NV storage. Further, the Examiner asserts that Ryu inherently teaches s*electively buffering a file system write request relating to the non-volatile storage device based on the determined power state of the non-volatile storage device.* Ryu teaches the automatically storing of data being used and to turn off the system in order to prevent the loss of data, i.e. hibernation. This is in contrast to Applicants' claimed invention. Claim 27 requires the selective buffering of data based in the power state of the NV storage device. Ryu teaches a system that automatically (not selectively) stores data on the hard drive, for instance, when the battery level of the system drops. Ryu does not teach or suggest the buffering of data in response to a write request. Claim 27 determines the power state of the NV storage device, not the system. For instance, a hard drive could be powered down and the system is still operating at full power mode. This selective buffering saves from having to power up the device to complete the write request. In contrast, Ryu teaches always storing – not buffering – data when the system battery is low. The prevention of data loss is not the same problem as optimizing power consumption. Application of the teachings of Ryu would not result in Applicants' claimed invention which optimizes activation of non-volatile storage devices to reduce power consumption. Moreover, Ryu teaches storing data selectively based on low battery of the system, but does not teach selective buffering the write request base

on a determination of the power state of the storage device. Ryu teaches away from this by actually choosing to write to the storage device to prevent data loss, rather than buffering the data to prevent unnecessary activation of the storage device. Thus, Claim 27 and its progeny are believed allowable.

As for Claim 28, Ryu does not determine whether the device is operating in a limited power state prior to determining whether the device is activated or inactivated. Ryu teaches only whether the system battery power is low enough to force a hibernation. In contrast, Applicants describe a limited power condition to be under battery power in general (Para. [0020]). Applying the teaching of Ryu to Applicants' claimed invention would result in forcing a hibernation whenever the system was operating under battery power, regardless of whether the battery was low. Moreover, as discussed above, Ryu fails to teach the other claims limitations. Thus, Claim 28 and its progeny are believed allowable.

As for Claim 29, Ryu does not determine whether the device is operating under battery power. Ryu teaches only determining whether battery power for the system is equal to a specific reference voltage. Further, Ryu fails to teach writing one or more buffered write operations to the non-volatile storage device upon an occurrence of a detected predetermined condition. Ryu teaches only that data is stored in a device when battery power is low to prevent loss of data. Moreover, Ryu fails to teach the other limitations of the claim, as discussed above. Thus, Claim 29 and its progeny are believed allowable.

As for Claim 38, Ryu fails to teach the writing one or more buffered write operations to the non-volatile storage device upon an occurrence of a detected predetermined condition, regardless of what the predetermined condition is. Moreover, Ryu fails to teach or suggest the other claim limitations, as discussed above. Thus, Claim 38 and its progeny are believed allowable.

Claims 31-32 and 35-37 are rejected under 35 U.S.C. § 102(e) as being anticipated by USPN 6,647,499 to Morcom (hereinafter, "Morcom"). This rejection is respectfully traversed and Claims 31-32 and 35-37 are believed allowable based on the foregoing and following discussion.

As for Claim 31, the Examiner asserts that Morcom teaches determining the power state of a device. Morcom teaches powering on a storage device and then copying a maximum

amount of data to cache. Immediately following the read, the storage device is powered down. In contrast, Applicants' claimed invention determines the current power state of the device and then based on that state, selectively reading a superset of the requested file portion into physical memory. Morcom reads data until the cache is full, but there is no requirement that the data is related to the requested portion, nor does Morcom teach that a lesser amount of data be read. This teaches away from selectively reading a superset. It is inherent in the limitation of selectively that a superset might not be read in some cases. This selection is not taught or suggested by Morcom. Therefore, Claim 31 and its progeny are believed allowable.

As for Claim 32, Morcom does not teach that a superset is the entire file. Morcom teaches reading data until the cache is full. If the cache is smaller than the file, then Morcom cannot copy the entire file, which is in contrast to Applicants' claim. Therefore, Claim 32 and its progeny are believed allowable.

As for Claim 35, the Examiner asserts that Morcom teaches *wherein the requested file portion is read from the device and returned to a requesting process before a remainder of the superset is read into physical memory.* Morcom does not teach that the requested portion is returned to the requesting process before a remainder is read. As discussed above, Morcom does not teach as superset as defined by Applicant, and Morcom does not teach the temporal requirements of returning the requested portion first. Morcom merely teaches reading as much data as will fit in the cache. Therefore, Claim 35 and is believed allowable.

Claims 36-37 are believed allowable based on being dependent on an allowable claim, as discussed above.

Claims 39-40 and 42 are rejected under 35 U.S.C. § 102(b) as being anticipated by USPN 5,812,883 to Rao (hereinafter, "Rao"). This rejection is respectfully traversed and Claims 39 and 42 are believed allowable based on the foregoing and following discussion.

As for Claim 39, Applicant has amended Claim 39 to include the limitations of Claim 40. The Examiner likens Rao's SCSI controller board to an intermediate file system driver providing read/write policy to the file system driver. The Examiner also likens Rao's drive controller board to a file system driver, as defined and claimed by Applicants. These assertions are in error. Specifically, Rao's drive controller board 206 may only accept rudimentary or low level commands which "pertain to the physical operation of the disk drive including positioning of the

disk drive head and electrical signals to the disk drive head used to read or write information, for example. Other commands which do not directly pertain to the rudimentary control and positioning of the disk heads, disk speed, etc., are considered high level commands and are processed by the SCSI controller board 202." In contrast, Applicants' claim requires that the read/write policy be provided to the file system driver by the intermediate file system driver based on user customized parameters. The drive controller board of Rao cannot accept this type of information, as by definition, it only accepts low level commands. Thus, Rao teaches away from Applicants' claimed invention. Further, Rao does not teach or suggest *selectively* buffering write requests to physical memory. Rao teaches always buffering disk writes to buffers within a SCSI controller board, not selectively buffering write request until a predetermined condition is detected. Therefore, Claim 39 and its progeny are believed allowable as amended.

As for Claim 42, Rao teaches using a control panel-like method to select the model and manufacturer of a disk drive and change the operating parameters. Rao does not teach selective buffering techniques to be used in conjunction with a read/write policy. Rao does mention that operating parameters might include caching operations, but does not teach selective buffering as described and claimed by Applicant. Further, Rao does not teach that an application running on the processor registers itself to indicate that it complies with selective buffering techniques. The Examiner misunderstands the reason for registration. A user may have different read/write policies for various applications, based on expected data requests or amount of data needed. The application running on the processor registers itself with the intermediate file system driver so that the intermediate FSD can act on the application's read/write policies when the application causes a read or write request. In contrast, Rao teaches an interface application which just sets the operational parameters of the disk drive. This is not at all the same concept, nor does it result in application-based policies. Thus, Claim 42 and its progeny are believed allowable.

Claim rejections under 35 U.S.C. § 103

Claims 2-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over USPN 6,622,252 to Klaasen et al. (hereinafter, "Klaasen et al.") in view of USPN 6,826,630 to Olds et al. (hereinafter, "Olds et al."). This rejection is respectfully traversed and Claims 2-6 are believed allowable based on the foregoing and follow discussion.

As for Claim 2, the Examiner asserts that Olds et al. teach *if the device is determined to be inactivated, buffering the write operation to physical memory.* In fact, Olds et al. teach caching information when conditions are "favorable." This is not the same as buffering write operations to physical memory when the device is inactivated. Favorable conditions could mean anything and have any purpose. Neither a definition of "favorable" is given, nor is the purpose. A favorable condition could be that the battery power is at full level. This would be contrary to Applicants' invention which specifically minimizes unnecessary reads/writes to the device when the device is deactivated. Further, applying the teachings of Olds et al. to Klaasen et al. will not result in Applicants' invention which optimizes power usage in a system and its devices.

Klaasen et al. teach a system for selecting modes of a drive (2-speed device) based on whether a portable device is operating under battery power. The point of their invention is to provide a lower speed using less power when under battery power. Klaasen et al. do not teach or suggest that buffering data will enhance their invention. Olds et al. teach a system for reducing latency time by reordering reads/writes. Olds et al. teach a system to prioritize disk access so that caching is not necessary because read/write latency is reduced. Application of Olds et al. to Klaasen et al. would be counter-intuitive and would result in a non-optimal system for reducing power consumption as Olds et al. teaches away from buffering, in order to reduce latencies. Thus, Claims 2-6 are believed allowable.

Claims 3 is believed allowable as being dependent on an allowable based claim.

As for Claim 4, a device being powered up vs. being powered down is not the same as a spindle being at a different velocity. As discussed in the specification and recited in the claim, powered up is an active state and powered down is an inactive state. A reduced spindle speed is still an activated drive and is not what is described and claimed by Applicants. Moreover, Claim 4 is believed allowable as being dependent on an allowable based claim.

Claim 5 is believed allowable as being dependent on an allowable based claim.

As for Claim 6, the Examiner asserts that Klaasen at al. teach writing one or more buffered write operations to the device upon an occurrence of a predetermined condition and seemingly cites normal spindle velocity as the condition. (Col. 1, lines 40-57). This assertion is in error. Klaasen et al. teach that in systems of the prior art spindle speed is increased when a write request is received. Thus, when a read/write request is received by the storage device, the

spindle is spun up to service the request. In contrast, Applicants' claimed invention requires writing one or more buffered write operations to the device upon occurrence of a predetermined condition and after activating the device if the device was inactivated. At the cited reference, Klaasen et al. fail to teach or suggest that one or more write operations have been buffered. Klaasen et al. teach away from buffering, specifically teaching "when an access operation to the disk drive is initiated, the spindle speed is increased until the disk is rotated at the normal operating velocity ... In other words, the power saving mode is disengaged prior to the commencement of read and write operations." (Col. 1, lines 51-56). It is clear that Klaasen et al. teach a system that powers down or spins down the spindles of a disk drive only until a read/write request is made, and then immediately spins up the drive. This is counter to Applicants' claimed invention which requires writing previously buffered write request. Further, the read/write requests taught by Klaasen et al. are not a *predetermined condition*, but only requests. A request is not a predetermined condition as described by Applicants. Thus, the Examiner has failed to show a prima facie case of obviousness and Claim 6 is believed allowable.

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Klaasen at al. in view of Olds et al. and further in view of U.S. Patent Application Publication 2003/0093645 to Wong et al. (hereinafter, "Wong et al."). This rejection is respectfully traversed and Claim 7 is believed allowable based on the foregoing and following discussion.

As discussed above, Klaasen et al. and Olds et al. do not teach the limitations of the claim. Further, Wong et al. teach a web based system for caching large amounts of information on hard disks (Para. [0032]) and would not be properly applied to the teachings of Klaasen et al. and Olds et al. These references solve different problems and one of ordinary skill in the art would not likely combine cache techniques for physical memory on a platform to web-based disk caching of URLs and web pages for access over the Internet. Wong et al. do not solve a problem in the domain of power saving techniques for portable computers and thus is not applicable to the invention. Moreover, Wong et al. teach caching data to a disk drive and not to physical memory [0032]. Specifically Wong et al. teach "objects cached by urlfs may be stored in memory and in a disk or in a disk only." This teaches away from Applicants' claimed invention of buffering

data in physical memory, and will not result in power-savings by the computing device. Therefore, Claim 7 is believed allowable.

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Wong et al, Klaasen et al. and Olds et al. and further in view of USPN 6,711,686 to Barrett (hereinafter, "Barrett"). This rejection is respectfully traversed and Claim 8 is believed allowable based on the foregoing and following discussion.

As discussed above, Klaasen et al., Olds et al., and Wong et al. do not teach all of the limitations of Claim 7. Further, Wong et al. is improperly combined with the other references as there is no motivation to use techniques for web caching to result in power savings for a portable computer. Barrett teaches data stored in a disk cache (col. 2, line 7) that is flushed to the disk only upon an exit. This is contrary to Applicants' claimed invention which requires caching to physical memory. Thus, the Examiner has failed to show all of the limitations of claim 8 in properly combined prior art and Claim 8 is believed allowable.

Claim 9 is rejected under 35 U.S.C. § 103(a) over Klaasen et al., Olds et al., as applied to Claim 2 and further in view of U.S. Patent Application Publication 2002/0019874 to Borr. This rejection is respectfully traversed and Claim 9 is believed allowable based on the foregoing and following discussion.

As discussed above, Klaasen et al. and Olds et al. fail to show the limitations of the Claims. The Examiner asserts that Borr teaches *determining whether the requested write operation corresponds to an entity registered to participate in the method of controlling device write operations*. This is incorrect. Borr teaches [0107] that a file has a parameter defining its access mode, i.e., read-only, writeable, etc. The file client device, as taught by Borr, associates a lock with the file based on whether it can be written to. This is not the same as registering to participate in a method of controlling write operations, as defined by Applicants. It will be apparent to one of ordinary skill in the art that placing a flag in a file is not the same as proactively registering the compliance of the read/write buffering scheme. Applicants describe this registration scheme, at least in Para. [0017]. This registration is not a term that one of ordinary skill in the art would assume means that a flag is set in a file.

Claim 10 is rejected under 35 U.S.C. § 103(a) over Klaasen et al., Olds et al., as applied to Claim 2 and further in view of USPN 5,815,648 to Giovanneti (hereinafter, "Giovannetti").

This rejection is respectfully traversed and Claim 10 is believed allowable based on the foregoing and following discussion.

As discussed above, Klaasen et al. and Olds et al. fail to teach the limitations of the claim. Therefore, combining the writeback operation of Giovannetti will not result in Applicants' claimed invention.

Claims 11-14, 16-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Klaasen et al. in view of Morcom. This rejection is respectfully traversed and Claims 11-14, and 16-20 are believed allowable based on the foregoing and following discussion.

As for Claims 11-14, the cited reference at Col. 2, lines 32-40 does not teach determining whether a limited power condition exists. Klaasen et al. teaches only that the controller reduces transfer speed when the storage device is powered by battery. This is not the same as a step of *determining* whether a limited power condition exists. Further, the Examiner cannot look at each element of the recited claim in a vacuum. The power condition determines whether only the requested data is read or whether a superset of the data is read. One cannot combine the teaching of Klaasen et al. and Morcom to provide alternate steps. Klaasen et al. specifically teach that the spindle speed is to operate at reduced rotation and/or a lower transfer rate when operating under reduced power. At no time is it suggested that that varying the amount of data to be read could be an option. Because the purpose of Klaasen et al. is to reduce the power consumption of the device by reducing the spindle rotation, applying the teaching of Morcom (to copy a maximum amount of data to cache) is counter-intuitive and would not result in Applicants' invention. Applying Morcom to Klaasen et al. would increase the power consumption and thus not fall within the teaching and intent of Klaasen et al. Further, Morcom teaches copying a maximum amount of data to a cache and then immediately powering down the disk regardless of the power state of the device. This is counter to Applicants' claimed invention which is not intended to immediately power down the device regardless of the power state. Thus, Morcom is misapplied to Klaasen et al. and a combination of the two references will not result in Applicants' invention.

In addition, Applicants' claim requires that the file portion is to be read into memory. The gist of the invention is to optimally access the storage device and avoid activating the device when unnecessary. Morcom teaches reading data to cache memory and not directly into memory so that the cache is always full. This is counter to the claimed invention and also counter to the

purpose of Applicants' invention. Applying Morcom would require that the cache be filled with data regardless of whether the data is logically related to the requested portion. This relationship is what drives whether a superset, a subset or entire file are read. Specifically with regard to Claim 14, the Examiner attempts to introduce set theory and assert that a "subset" of the file is the same as the entire file. In light of the requirement of claim differentiation, this cannot be the case. Claim 12 specifically requires the superset to be the entire file. Thus, as would be apparent to one of ordinary skill in the art, the subset will be understood to be a portion smaller than the entire file. Therefore this rejection is improper. Thus, Claims 11-14 are believed allowable.

As for Claim 16, Morcom teaches that the data is returned from cache memory. In contrast, Applicants claim requires that the data be read from the device and not cache memory. Thus, applying Morcom would return data retrieved from cache memory to the process and would preclude returning data retrieved from the device.

As for Claim 17, Morcom does not teach that the requested portion is returned to the requesting process before a remainder is read. As discussed above, Morcom does not teach a superset as defined by Applicant, and Morcom does not teach the temporal requirements of returning the requested portion first. Morcom merely teaches reading as much data as will fit in the cache.

Claim 18 is allowable as being dependent on an allowable base claim, as discussed above.

As for Claim 19, Morcom does not teach or suggest *if a superset of the requested file portion is read into memory, deactivating the device.* Morcom teaches that cache is always filled to the maximum. In some cases, this might even be less than a requested portion. Further, Morcom teaches that the device is always deactivated after a read. Morcom does not teach an inherent determination that a superset of the requested portion has been read into memory. Nor does Morcom teach that there is a possibility that the device will not be inactivated, which is inherent in Applicants' claimed invention. Moreover, Morcom teaches only that data be read into a cache and not that a requested file portion be read into memory.

Claim 20 is allowable as being dependent on an allowable base claim, as discussed above. Thus, Claims 11-14 and 16-20 are believed allowable.

Claims 15, 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Klaasen et al. and Morcom and further in view of U.S. Patent Application Publication

2002/0091902 to Hirofuji (hereinafter, "Hirofuji"). This rejection is respectfully traversed and Claims 15, 22-23 are believed allowable based on the foregoing and following discussion.

Klaasen et al. and Morcom do not teach the recited limitations, as discussed above.

As for Claim 15, Hirofuji does not teach or suggest identifying the subset of the file to be read into memory is based on one or more file access trends. Hirofuji actually discusses the arrangement of the data in the cache memory. Further, Hirofuji discusses the reading of information into cache memory in an arrangement based on likely access order. Morcom teaches to read data until cache memory is full. Even if it could be surmised that Hirofuji teaches selection of data based on file access trends, it is improper to combine this with Morcom. It is improper to combine the teaching of Morcom with Hirofuji as they teach incompatible methods. One cannot select a portion of a file and also fill cache until it is full. One concept is to reduce and one concept is to increase. Thus, the rejection is improper and should be withdrawn.

As for Claims 22-23, Hirofuji does not teach the registering of file types as described by Applicants. This term is specifically discussed in the specification in the context of Applicants' invention and other definitions cannot be assumed by one of ordinary skill in the art.

As for Claim 23, Hirofuji teaches an arrangement priority to distinguish between likely sequential or random access. This is not the same as a relative file type priority and selectively storing a superset file portion relative to the relative priority. Hirofuji teaches that data may be stored differently based on its access type. Applicants require that a superset of the requested file potion may be selectively stored based on a relative priority. Thus, the Examiner has failed to show a prima facie case of obviousness and Claims 15 and 22-23 are believed allowable.

Claims 24-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ryu in view of Klaasen et al. This rejection is respectfully traversed and Claims 24-26 are believed allowable based on the foregoing and following discussion.

As discussed above, Ryu teaches the automatically storing of data being used and to turn off the system in order to prevent the loss of data, i.e. hibernation. Ryu teaches detecting whether battery voltage is between a specific voltage range. Ryu's device may be operating under battery power (a limited power condition as defined by Applicant), but not perform any buffered write operations, as required in Claims 24-26, if it is not within the specified range. Further, Ryu teaches always storing – not buffering – data when the system battery is low. The prevention of

data loss is not the same problem as optimizing power consumption. Thus, a combination of Ryu with Klaasen et al. will not result in Applicants' claimed invention.

As for Claim 26, as discussed above, Ryu does not teach determining whether a limited power condition exists, but assumes battery power and just compares voltages to determine when the battery voltage is low enough to force a hibernation. Thus, Claims 24-26 are believed allowable.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Klaasen et al. and Morcom in view of USPN 6,442647 to Morton et al. (hereinafter, "Morton et al."). This rejection is respectfully traversed and Claim 21 is believed allowable based on the foregoing and following discussion.

Klaasen et al. do not disclose each and every limitation as asserted by the Examiner, as discussed above. Further, Morton et al. teach a system to take a request for data and turn it into two commands. The first request relates to the actual data request and the second relates to reading the remainder of data on the track. Morton et al. do not teach *wherein the superset of the requested file portion is logically related to the requested portion.* Morton et al. teach only that additional data on the track is read. Often this data will not be related to the requested data and especially not *logically related.* The method taught by Morton et al. is brute force to maximize a data read, but does not optimize the device access. By reading only data that is logically related to the data requested, access to the device is optimized, i.e., not over-accessed for an excessive amount of data (remainder of track). Thus, Morton et al. do not teach or suggest the recited claim limitations and Claim 21 is believed allowable.

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Morcom in view of USPN 6,415,359 to Kimura et al. (hereinafter, "Kimura et al."). This rejection is respectfully traversed and Claim 33 is believed allowable based on the foregoing and following discussion.

Contrary to the Examiner's assertion, Morcom does not teach or suggest all of the elements of the Claimed invention, as discussed in relation with Claim 31, above. Specifically, Applicants' claimed invention determines the current power state of the device and then based on that state, selectively reading a superset of the requested file portion into physical memory. Morcom reads data until the cache is full, but there is no requirement that the data is related to

the requested portion, nor does Morcom teach that a lesser amount of data be read. This teaches away from selectively reading a superset. Therefore, regardless of the teaching of Kimura et al., the Examiner has failed to put forth a prima facie case of obviousness, as all of the limitations of the claim have not been shown by the cited references. Therefore, Claim 33 is believed allowable.

Claim 34 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Morcom in view of Morton et al. This rejection is respectfully traversed and Claim 34 is believed allowable based on the foregoing and following discussion.

Morcom does not teach the limitation of the recited Claim, as discussed above for Claim 31. Further, Morton et al. teach a system to take a request for data and turn it into two commands. The first request relates to the actual data request and the second relates to reading the remainder of data on the track. Morton et al. do not teach *wherein the superset of the requested file portion is logically related to the requested portion.* Morton et al. teach only that additional data on the track is read, as discussed above, at least for Claim 21. Therefore, the Examiner has failed to put forth a prima facie case of obviousness, as all of the limitations of the claim have not been shown by the cited references. Thus, Claim 34 is believed allowable.

Claim 41 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Rao in view of Giovannetti. This rejection is respectfully traversed and Claim 33 is believed allowable based on the foregoing and following discussion.

Rao does not teach the limitations of the Claim, at least as discussed above in conjunction with Claim 39. At least, Rao teaches away from Applicants' claimed invention. Rao does not teach or suggest selectively buffering write requests to physical memory. Rao teaches always buffering disk writes to buffers within a SCSI controller board, not selectively buffering write request until a predetermined condition is detected. Further, Giovannetti does not teach that write requests are intercepted and buffered by the intermediate file system driver. Therefore, a combination of the cited references will not result in Applicants' claimed invention and Claim 41 is believed allowable.

All claims remaining in the application are now allowable.

CONCLUSION

In view of the foregoing, Claims 1 -39 and 41-42 are all in condition for allowance. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (703) 633-6845. Early issuance of Notice of Allowance is respectfully requested. Please charge any shortage of fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such account.

Respectfully submitted,

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s/ *Joni D. Stutman-Horn* /

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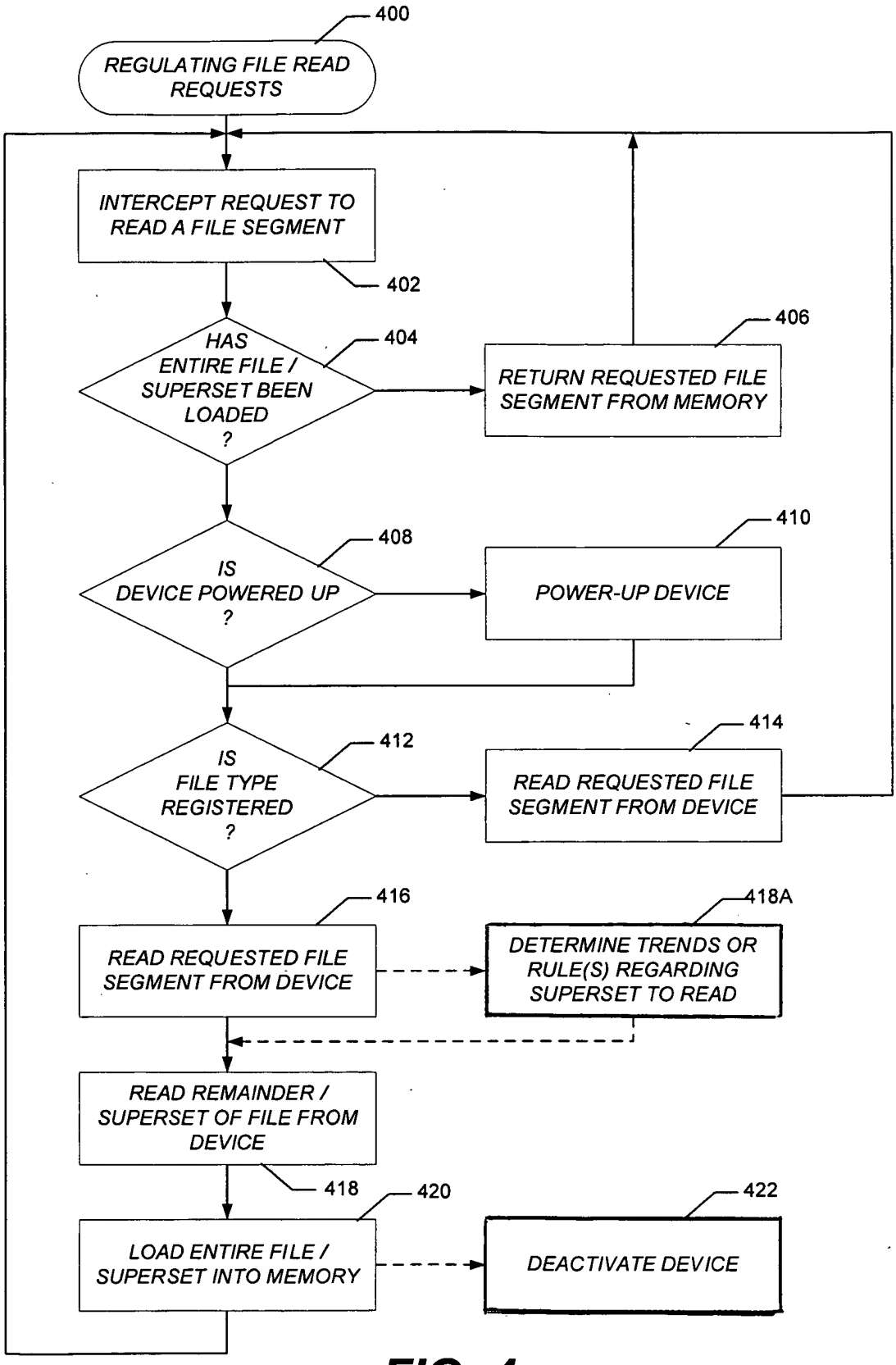

FIG. 4